



Pediatric Hemophilia Early Arthropathy Detection and Ultrasound (HEAD-US) Courses

COURSE COMPARISON CHART

BEGINNER

This activity is designed for physical therapists, physicians, and advanced practice providers who care for pediatric bleeding disorder patients seeking to develop foundational skills in ultrasound with a focus on musculoskeletal assessment and joint pathology using the Hemophilia Early Arthropathy Detection with Ultrasound (HEAD-US) protocol. Over two and a half days, participants will engage in a combination of didactic lectures, hands-on scanning practice, and interactive case discussions to reinforce key ultrasound principles. The curriculum covers ultrasound physics, equipment optimization, normal joint anatomy, and scanning techniques for the elbow, knee, and ankle using the HEAD-US protocol. Participants will also gain experience in recognizing common pathological findings, including osteochondral damage, acute hemarthrosis and joint recess distension by effusion and synovial proliferation. Finally, the course also introduces key considerations for musculoskeletal imaging in children and a concise overview of HEAD-US scoring of hemophilic arthropathy, aspects that will be explored in-depth in the advanced course. Join us for a specialized training experience led by Drs. Carlo Martinoli, Nihal Bakeer, and Kyle Davis, along with the highly experienced physicians and physical therapists at Innovative Hematology. This course focuses on foundational skills (Level-I) and does not cover advanced topics, such as muscle injuries, advanced pediatric arthropathy detection, or HEAD-US scoring calibration. For those interested in these advanced topics, we offer a separate advanced course (Level-II).

OBJECTIVES:

- **Develop fundamental ultrasound skills**

Understand the principles of ultrasound physics, equipment adjustment, and scanning techniques to accurately assess musculoskeletal structures.

- **Perform systematic joint ultrasound examinations**

Acquire proficiency in the HEAD-US protocol, including anatomical review and hands-on scanning of the elbow, knee, and ankle in person with and without hemophilia, all under expert guidance

- **Identify normal and pathological findings**

Recognize normal joint anatomy and interpret key pathological ultrasound findings, including synovial changes, hemarthrosis, and osteochondral surface abnormalities.

- **Gain basic understanding of pediatric ultrasound scanning and HEAD-US scoring**

Learn the anatomical nuances of the immature skeleton and key considerations for musculoskeletal imaging in children. Develop a basic understanding of the HEAD-US scoring system for hemophilia arthropathy in this age group.

ADVANCED

This activity is designed for physical therapists, physicians, and advanced practice providers with prior ultrasound experience seeking to enhance their skills in comprehensive pediatric joint assessment, muscle injury evaluation, and scoring of hemophilic arthropathy using the Hemophilic Arthropathy Early Detection with Ultrasound (HEAD-US) protocol. This intensive two-day course provides an in-depth review of ultrasound techniques used for imaging both healthy and affected pediatric joints (elbows, knees, and ankles), with a focus on advanced pathology detection and practical hands-on sessions under expert tutoring. Participants will refine their expertise in HEAD-US scoring, engage in live-case scanning and scoring, and undergo self-testing calibration exercises on a large dataset of scans. Additional sessions will address synovial and osteochondral mimickers, image interpretation pitfalls, and guidelines for acquiring standardized imaging documentation for external reading. Through expert-led interactive sessions, attendees will gain confidence to apply advanced ultrasound techniques into clinical practice. Join us for a unique training experience led by Drs. Carlo Martinoli, Nihal Bakeer, and Kyle Davis, along with the highly experienced physicians and physical therapists at Innovative Hematology.

OBJECTIVES:

- **Master advanced pediatric MSK and joint ultrasound scanning**

Gain proficiency in ultrasound scanning of both healthy and arthropathic pediatric joints and in accurate image interpretation through deep understanding of pediatric skeletal maturation as well as imaging pitfalls and nuances. Practical sessions will incorporate “tips and tricks” to consolidate knowledge and enhance scanning confidence.

- **Enhance interpretation and scoring skills using HEAD-US**

Deepen understanding of the HEAD-US scoring system through structured calibration exercises, live case scanning, and real-time scoring to improve diagnostic accuracy and interobserver reliability.

- **Recognize and interpret advanced pathological findings**

Identify and differentiate key pathological ultrasound findings in pediatric joints and muscles, including synovial hypertrophy, hemarthrosis, osteochondral changes, and muscle hematomas. Differential diagnoses will be described to avoid misinterpretation and support accurate clinical assessment.



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ELIGIBILITY CRITERIA

BEGINNER

To attend the Beginner Pediatric Hemophilia Early Arthropathy Detection and Ultrasound (HEAD-US) course, you **must** meet the following criteria:

- Be employed at a Hemophilia Treatment Center (HTC) in a bleeding disorder patient-facing role for at least six (6) months.
- Provide care to pediatric patients. Lifespan providers are also eligible to apply.
- Have access to a point-of-care MSKUS device at HTC place of employment.
- Work at an HTC that intends to have dedicated staff to perform MSKUS.
- While beneficial, *no prior MSKUS experience is required* for this course.
- We will accept up to two (2) individuals from the same HTC to attend the Beginner course
- Submitted applications will automatically be sent to Regional Administrator for review/approval; their review/approval of the application is a required step to confirm registration acceptance at the program.

ADVANCED

To attend the Advanced Pediatric Hemophilia Early Arthropathy Detection and Ultrasound (HEAD-US) course, you **must** meet the following criteria:

- Be employed at a Hemophilia Treatment Center (HTC) in a bleeding disorder patient-facing role for at least six (6) months.
- Provide care to pediatric patients. Lifespan providers are also eligible to apply.
- Have access to a point-of-care MSKUS device at HTC place of employment.
- Work at an HTC that intends to have dedicated staff to perform MSKUS.
- Need to have demonstrated proficiency scanning patients using point of care ultrasound and be able to identify normal joint anatomy in ultrasound scanning planes.
- Prior MSKUS experience is required for this course. Applicants must have previously completed the Basic Pediatric Hemophilia Early Arthropathy Detection and Ultrasound (HEAD-US) Course or other equivalent training.
- We will accept up to two (2) individuals from the same HTC to attend the Advanced course.
- Submitted applications will automatically be sent to Regional Administrator for review/approval; their review/approval of the application is a required step to confirm registration acceptance at the program.